

REMARKS

Applicant appreciates the Examiner's detailed Response to Arguments, yet respectfully requests reconsideration and allowance of the subject application. Claims 1-86 are pending.

Applicant's amendments and remarks after Final are appropriate under 37 C.F.R. §1.116 because they address the Office's remarks in the Final Action, and thus could not have been presented earlier. In addition, the amendments and remarks should be entered to place the case in better form for appeal.

35 U.S.C. §102 Claim Rejections

A. Claims 1-14, 18-24, 27-36, 39-40, 42-67, and 72-80 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,138,124 to Beckhardt (hereinafter, "Beckhardt") (*Office Action* p.2). Applicant respectfully traverses the rejection.

B. Claims 81-86 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,295,541 to Bodnar et al. (hereinafter, "Bodnar") (*Office Action* p.24). Applicant respectfully traverses the rejection.

Beckhardt describes replication for database records (i.e., defined as document: field: value) and utilizes field sequence numbers to replicate a document (col.6, lines 32-67). Contrary to the single-value fields described in Beckhardt, Applicant describes objects that each contain attributes, where an attribute can include multiple linked values (i.e., object: attribute: multiple linked values) (*Specification* p.7, lines 20-23). The Office recognizes that Beckhardt

1 only shows one value per field in the "exemplary document structure described at
2 Col.6, lines 32-60... wherein each field comprises a field name and a value"
3 (*Office Action* p.32).

4 Further, Applicant utilizes conflict resolution data at an attribute
5 linked-value level to indicate a change to an object (*Specification* p.7, lines 22-23)
6 rather than at the field level as described in Beckhardt. The Office states that
7 "Beckhardt uses the FSN (field sequence number) associated with each attribute
8 value to resolve [a] replication conflict" (*Office Action* p.32). Respectfully,
9 Applicant disagrees because Beckhardt specifically states that "the system
10 determines which fields need to be replicated by finding the actual FSNs of both
11 documents and comparing the actual FSNs of corresponding fields to determine
12 which is greater" (col.6, lines 7-12, emphasis added).

13 Further, Beckhardt states that when a field in a document is updated, a field
14 sequence number is updated to indicate that the field has been updated (col.2, lines
15 10-15; col.3, line 65 to col.4, line 3). When a document that contains the updated
16 field is replicated with another document, the field sequence number for the field
17 is used to determine which of the documents is more recently revised (col.2, lines
18 15-21).

19 Applicant acknowledges that a field sequence number update in Beckhardt
20 may correspond to the value of a field being updated, such as for a timestamp
21 update for a field in a document (*Beckhardt* col.1, lines 40-45). The Office states
22 that "this timestamp corresponds to the time when the last individual value is
23 inserted, or updated" (*Office Action* p.33). However, the only reason that the
24 Office can attribute a field sequence number update or field timestamp update to a
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1 value of a field is because a field in Beckhardt only has one possible value. As
2 described above, this is contrary to objects that each contain attributes, where an
3 attribute can include multiple linked values (i.e., object: attribute: multiple linked
4 values) as described and claimed by the Applicant.

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6 Claim 1 recites "an object having an attribute, the attribute comprised of
7 individual values, the individual values having conflict-resolution data".
8 Beckhardt does not show or disclose an object having an attribute which is
9 comprised of individual values, as recited in claim 1. Beckhardt describes
10 database records (i.e., defined as document: field: value) that include single-value
11 fields rather than attributes that can include multiple values, as claimed by
12 Applicant. The Office cites Beckhardt at col.1, lines 15-25 stating that Beckhardt
13 teaches the system recited in claim 1 (*Office Action* p.2). Applicant disagrees
14 because Beckhardt does not show or disclose attributes that can include multiple
15 values.

16 Claim 1 also recites resolving "a replication conflict between a value of the
17 attribute in the object and the value of the attribute in the replica object, the
18 replication conflict being resolved with the conflict-resolution data." Beckhardt
19 does not show or disclose a replication conflict resolved with conflict-resolution
20 data of individual values, as recited in claim 1. Beckhardt specifically states that
21 when a document that contains the updated field is replicated with another
22 document, the field sequence number for the field is used to determine which of
23 the documents is more recently revised (col.2, lines 15-21, emphasis added).
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1 Accordingly, claim 1 is allowable over Beckhardt and Applicant
2 respectfully requests that the §102 rejection be withdrawn.

3
4 Claims 2-14 are allowable by virtue of their dependency upon claim 1.
5 Additionally, some or all of claims 2-14 are allowable over Beckhardt for
6 independent reasons. For example:

7 Claim 6 recites that "the conflict-resolution data comprises an update
8 timestamp that corresponds to when an individual value is updated". Beckhardt
9 does not show or disclose an update timestamp that corresponds to an individual
10 value (e.g., one of multiple values), as recited in claim 6 in combination with
11 claim 1. The Office contends that Beckhardt shows an update timestamp at col.1,
12 lines 35-45 and at col.6, lines 40-45 (*Office Action* p.4). Applicant disagrees
13 because Beckhardt only describes a time stamp for a field in a document (col.1,
14 lines 41-42), and shows only a creation date and a revision date for an overall
15 document (col.6, lines 40-45). Beckhardt does not disclose any such update
16 timestamp that corresponds to an individual value of multiple values, as recited in
17 claim 6 in combination with claim 1.

18 Accordingly, claim 6 is allowable over Beckhardt for these additional
19 reasons and Applicant respectfully requests that the §102 rejection be withdrawn.

20 Claim 7 recites that "the conflict-resolution data comprises a creation
21 indicator that corresponds to when an individual value is created". Beckhardt does
22 not show or disclose a creation indicator that corresponds to an individual value
23 (e.g., one of multiple values), as recited in claim 7 in combination with claim 1.
24 The Office contends that Beckhardt shows a creation indicator at col.6, lines 40-45
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1 (Office Action p.5). Applicant disagrees because Beckhardt shows only a creation
2 date and a revision date for an overall document, and field sequence numbers for
3 the fields of the document (col.6, lines 40-45). Beckhardt does not disclose any
4 such creation indicator that corresponds to an individual value of multiple values,
5 as recited in claim 7 in combination with claim 1.

6 Accordingly, claim 7 is allowable over Beckhardt for these additional
7 reasons and Applicant respectfully requests that the §102 rejection be withdrawn.

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9 Claim 18 recites "an object having an attribute comprised of linked values,
10 individual linked values having indicators to indicate a change to a linked value of
11 the attribute". Beckhardt does not show or disclose an object having an attribute
12 comprised of linked values, or individual linked values having indicators to
13 indicate a change to a linked value, as recited in claim 18.

14 As described above in the response to the rejection of claim 1, Beckhardt
15 describes a document that includes single-value fields, rather than attributes that
16 can include multiple linked values, as claimed. The Office cites Beckhardt at
17 col.1, lines 15-25 as teaching an object having an attribute comprised of linked
18 values (Office Action p.9). Applicant disagrees because Beckhardt does not show
19 or disclose attributes that can include multiple linked values. Further, Beckhardt
20 does not show or disclose individual linked values (e.g., multiple linked values of
21 an attribute) that include indicators to indicate a change to a linked value, as
22 recited in claim 18.

23 Accordingly, claim 18 is allowable over Beckhardt and Applicant
24 respectfully requests that the §102 rejection be withdrawn.
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2 Claims 19-24 are allowable by virtue of their dependency upon claim 18.
3 Additionally, some or all of claims 19-24 are allowable over Beckhardt for
4 independent reasons. For example:

5 Claim 21 recites "an update indicator that corresponds to when a linked
6 value is changed";

7 Claim 22 recites "a creation indicator that corresponds to when a linked
8 value is created";

9 Claim 23 recites "an update timestamp that corresponds to when the linked
10 value is changed"; and

11 Claim 24 recites "a creation timestamp that corresponds to when a linked
12 value is created, ..., and an update timestamp that corresponds to when the linked
13 value is changed".

14 As described above in the response to the rejection of claims 6 and 7,
15 Beckhardt does not show or disclose any such indicators (e.g., update indicator,
16 creation indicator, update timestamp, and creation timestamp) that correspond to
17 when a linked value (e.g., one of multiple linked values of an object attribute) is
18 created and/or changed. Accordingly, claims 21-24 are allowable over Beckhardt
19 for these additional reasons and Applicant respectfully requests that the §102
20 rejection be withdrawn.

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22 Claim 27 recites a "first data structure having a multi-valued attribute
23 comprised of linked values, individual linked values having conflict-resolution
24 information to indicate a change to a value of the attribute". Beckhardt does not
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1 show or disclose a data structure having a multi-valued attribute comprised of
2 linked values, as recited in claim 27.

3 As described above in the response to the rejection of claim 1, Beckhardt
4 describes a document that includes single-value fields, rather than a multi-valued
5 attribute comprised of multiple linked values, as claimed. The Office cites
6 Beckhardt at col.1, lines 15-25 stating that Beckhardt teaches the system recited
7 in claim 27 (*Office Action* p.10). Applicant disagrees because Beckhardt does not
8 show or disclose attributes that can include multiple linked values.

9 The Office also contends that each document in Beckhardt comprises
10 multiple fields and that each field comprises multiple values (*Office Action* p.34).
11 The Office relies on a "Status" field in three examples shown in Beckhardt col.7.
12 The "Status" field includes one different value in each of the three examples.
13 However, the "Status" field (and all of the document fields) can only have one
14 associated value at any one time. In Beckhardt, the value of the "Status" field
15 changes from one example to the next, but only ever includes one value. This is
16 not an example of a multi-valued attribute that may contain multiple linked values
17 at any one time, as described by the Applicant.

18 Claim 27 also recites "a replication conflict between a value of the attribute
19 in the first data structure and a value of the attribute in the second data structure
20 resolved with the conflict-resolution information associated with the values."
21 Beckhardt does not show or disclose a replication conflict resolved between values
22 in a first data structure and a second data structure with the conflict-resolution
23 information associated with the values, as recited in claim 27. Further, Beckhardt
24 does not show or disclose individual linked values having conflict-resolution
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1 information to indicate a change to a value of the attribute, as recited in claim 27.
2 Beckhardt specifically states that when a document that contains the updated field
3 is replicated with another document, the field sequence number for the field is
4 used to determine which of the documents is more recently revised (col.2, lines
5 15-21, emphasis added).

6 Accordingly, claim 27 is allowable over Beckhardt and Applicant
7 respectfully requests that the §102 rejection be withdrawn.

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9 Claims 28-36 are allowable by virtue of their dependency upon claim 27.
10 Additionally, some or all of claims 28-36 are allowable over Beckhardt for
11 independent reasons. For example:

12 Claims 31 and 35 recite "an update indicator that corresponds to when an
13 individual linked value is changed";

14 Claim 32 recites "an update timestamp that corresponds to when an
15 individual linked value is changed";

16 Claim 33 recites "a creation indicator that corresponds to when an
17 individual linked value is created";

18 Claim 34 recites "a creation timestamp that corresponds to when an
19 individual linked value is created"; and

20 Claim 36 recites "a creation indicator that corresponds to when an
21 individual linked value is created, ..., and an update indicator that corresponds to
22 when the individual linked value is changed."

23 As described above in the response to the rejection of claims 6 and 7,
24 Beckhardt does not show or disclose any such indicators (e.g., update indicator,
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1 update timestamp, creation indicator, and creation timestamp) that correspond to
2 when an individual linked value (of a multi-valued attribute of a data structure) is
3 created and/or changed. Accordingly, claims 31-36 are allowable over Beckhardt
4 for these additional reasons and Applicant respectfully requests that the §102
5 rejection be withdrawn.

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7 Claim 39 recites a computer-readable medium having stored thereon a data
8 structure comprising "a first data field containing an attribute" and a "a second
9 data field containing a linked value of the attribute contained in the first data
10 field". As described above in the response to the rejection of claim 1, Beckhardt
11 does not show or disclose a data structure comprising a first data field containing
12 an attribute and a second data field containing a linked value of the attribute, as
13 recited in claim 39.

14 Claim 39 also recites "a fourth data field containing an update indicator
15 corresponding to when the version indicator contained in the third data field is
16 changed." As described above in the response to the rejection of claims 6 and 7,
17 Beckhardt does not show or disclose an indicator corresponding to when a version
18 indicator is changed.

19 Accordingly, claim 39 is allowable over Beckhardt and Applicant
20 respectfully requests that the §102 rejection be withdrawn.
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1 Claim 40 is allowable by virtue of its dependency upon claim 39.
2 Additionally, claim 40 recites "a fifth data field containing a creation indicator
3 corresponding to when the linked value contained in the second data field is
4 created." Beckhardt does not show or disclose an indicator corresponding to when
5 a creation indicator corresponding to a linked value is created. Accordingly, claim
6 40 is allowable over Beckhardt for this additional reason.

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8 Claim 42 recites a network system comprising "an object having a multi-
9 valued attribute, the multi-valued attribute comprised of individual values", a
10 "second object having a multi-valued attribute comprised of individual values, the
11 individual values configured to have conflict-resolution data", and a computer to
12 "resolve a replication conflict between the object and the second object at the
13 attribute value level with the conflict-resolution data."

14 As described above in the response to the rejection of claims 1 and 27,
15 Beckhardt does not show or disclose "an object having a multi-valued attribute
16 comprised of individual values" or "individual values configured to have conflict-
17 resolution data", as recited in claim 42. Further Beckhardt does not show or
18 disclose that a replication conflict is resolved between objects at an attribute value
19 level with conflict-resolution data, as recited in claim 42.

20 Accordingly, claim 42 along with dependent claims 43-54 are allowable
21 over Beckhardt and Applicant respectfully requests that the §102 rejection be
22 withdrawn.
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1 Claim 55 recites "the object and the replica object having an attribute
2 comprised of individual values, the individual values having conflict-resolution
3 data". As described above in the response to the rejection of claims 1 and 27,
4 Beckhardt does not show or disclose an object having an attribute comprised of
5 individual values (e.g., multiple values), or "individual values configured to have
6 conflict-resolution data", as recited in claim 55. Accordingly, claim 55 is
7 allowable over Beckhardt and Applicant respectfully requests that the §102
8 rejection be withdrawn.

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10 Claims 56-67 and 72 are allowable by virtue of their dependency upon
11 claim 55 (either directly or indirectly). Additionally, some or all claims 56-72 are
12 allowable over Beckhardt for independent reasons. For example:

13 Claims 58-59 and 62-63 recite "an update timestamp that corresponds to
14 when an individual value is changed";

15 Claims 60-61 recite "a creation timestamp that corresponds to when an
16 individual value is created"; and

17 Claims 65-66 recite "a creation timestamp that corresponds to when an
18 individual value is created, ..., and an update timestamp that corresponds to when
19 the individual value is changed".

20 As described above in the response to the rejection of claims 6 and 7,
21 Beckhardt does not show or disclose any such indicators (e.g., update timestamp
22 and creation timestamp) that correspond to when an individual value (e.g., one of
23 multiple values of an object attribute) is created and/or changed. Accordingly,
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1 claims 58-63 and claims 65-66 are allowable over Beckhardt for these additional
2 reasons and Applicant respectfully requests that the §102 rejection be withdrawn.

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4 Claim 73 recites a "method for replicating a linked value of a multi-valued
5 attribute contained in an object, the linked value having conflict-resolution
6 information and replicated from a replica object having the multi-valued attribute
7 and the linked value". As described above in the response to the rejection of
8 claims 1 and 27, Beckhardt does not show or disclose an object having a
9 multi-valued attribute which includes a linked value, or a linked value having
10 conflict-resolution information", as described in claim 73. Accordingly, claim 73
11 is allowable over Beckhardt and Applicant respectfully requests that the §102
12 rejection be withdrawn.

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14 Claims 74-80 are allowable by virtue of their dependency upon claim 73
15 (either directly or indirectly). Additionally, some or all of claims 74-80 are
16 allowable over Beckhardt for independent reasons. For example:

17 Claim 75 recites "an update timestamp that corresponds to when the linked
18 value is changed";

19 Claim 76 recites "a creation timestamp that corresponds to when the linked
20 value is created"; and

21 Claims 77-78 recite "a creation timestamp that corresponds to when the
22 linked value is created, ..., and an update timestamp that corresponds to when the
23 linked value is changed".
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1 As described above in the response to the rejection of claims 6 and 7,
2 Beckhardt does not show or disclose any such indicators (e.g., update timestamp
3 and creation timestamp) that correspond to when a linked value (of a multi-valued
4 attribute of an object) is created and/or changed. Accordingly, claims 75-78 are
5 allowable over Beckhardt for these additional reasons and Applicant respectfully
6 requests that the §102 rejection be withdrawn.

7
8 Claim 81 recites a method comprising “replicating a first object with a
9 second object, the first object having an attribute comprised of linked values, the
10 second object having an attribute comprised of linked values configured to have
11 associated conflict-resolution data”. Bodnar does not show or disclose an object
12 having an attribute comprised of linked values, or a linked value having associated
13 conflict-resolution data, as recited in claim 81.

14 Similarly to Beckhardt, Bodnar describes synchronizing datasets of records
15 (i.e., defined as record: field; value) where each record may include one or more
16 data fields (col.7, lines 13-25). Contrary to the single-value fields described in
17 Bodnar, Applicant describes objects that each contain attributes, where an attribute
18 can include multiple linked values (i.e., object: attribute: linked values)
19 (*Specification* p.7, lines 20-23). The Office recognizes that Bodnar only shows
20 one value per field in that “each data field of the record comprises a pair
21 <field name>: <field value> (col.7, lines 20-30)” (*Office Action* p.35).

22 Claim 81 also recites resolving “with the conflict-resolution data, a
23 replication conflict between the first object and the second object at an attribute
24 value level.” Bodnar does not show or disclose resolving a conflict between
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1 objects at an attribute value level (e.g., the multiple linked values) with conflict-
2 resolution data, as recited in claim 81. The Office cites Bodnar at col.33 line 30 to
3 col.34, line 20 which only describes comparing or merging two records. There is
4 no discussion in Bodnar of attribute linked-value conflict-resolution data, as
5 described in claim 81.

6 Accordingly, claim 81 along with dependent claims 82-86 are allowable
7 over Bodnar and Applicant respectfully requests that the §102 rejection be
8 withdrawn.

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10 **35 U.S.C. §103 Claim Rejections**

11 Claims 15-17, 25-26, 37-38, 41, and 68-71 are rejected under 35 U.S.C.
12 §103(a) for obviousness over Beckhardt in view of Bodnar (*Office Action* p.25,
13 ¶15). Applicant respectfully traverses the rejection.

14 As described above in the response to the §102 rejections of independent
15 claims 1, 18, 27, 39, and 55, these claims are allowable over both Beckhardt
16 and/or Bodnar. Accordingly, claims 15-17 are allowable by virtue of their
17 dependency upon claim 1; claims 25-26 are allowable by virtue of their
18 dependency upon claim 18; claims 37-38 are allowable by virtue of their
19 dependency upon claim 27; claim 41 is allowable by virtue of its dependency upon
20 claim 39; and claims 68-71 are allowable by virtue of their dependency upon
21 claim 55.

Conclusion

Pending claims 1-86 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Examiner is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

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